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(54) OPTICAL COUPLING DEVICE

(57)Abstract:

**PURPOSE:** To make it possible to obtain a low-loss coupling characteristics and to realize an optical coupling device improved in producibility by stepwise changing the sizes of the optical waveguide core parts of a spot size changing part and constituting this device. **CONSTITUTION:** This optical coupling device has a core 101 of the optical waveguide, an (n) type semiconductor substrate 102 and an embedded layer or (p) type semiconductor layer 103. The (n) type semiconductor substrate 102 and the (p) type semiconductor layer 103 are formed as the clad region of the optical waveguide. The region I is an optical function element part, such as semiconductor laser, optical modulator or optical switch. Further, the regions II, III are the optical waveguides having a spot size changing function. The light wave spot size of the optical waveguide of the region I is changed gradually stepwise, by which the coupling loss with the optical function device (for example, optical fiber) connected to the light exit end is made small. Namely, the optical waveguide is so constituted that at least either of the width or thickness of the core 101 of the optical waveguide is changed stepwise in the diameter size.

